

Checklist for Adult Sponsor / Safety Assessment Form (1)

This completed form is required for ALL projects and
must be completed prior to experimentation

Student's Name Katherine Kenyon

- 1) The student and a parent / guardian have signed the **Approval Form (1B)**.
- 2) I have reviewed the **Research Plan (1A)**, **Research Plan Attachment** and signed **Approval Form (1B)**.
- 3) This project involves the following area(s) and requires **SRC/IRB approval** before experimentation begins:

Human Subjects

Potentially Hazardous Biological Agents*

Vertebrate Animals

Controlled Substances

* All projects incorporating microorganisms, rDNA technologies or human or animal fresh tissues, blood or body fluids.

- 4) This project does not involve any of the research areas listed in #3.
- 5) This project involves human subjects. The student will obtain approval from an **Institutional Review Board (IRB)** before experimentation is started. (See pp. 12-14.)
- 6) This project involves vertebrate animals, potentially hazardous biological agents and controlled substances. The student will obtain approval from a **Scientific Review Committee (SRC)/IACUC/IBC/RAC** before experimentation is started. (See pp. 15-23.)
7. This project involves the use of hazardous substances or devices checked below. A Designated Supervisor will provide proper supervision to the student. Prior approval by the adult sponsor and certification by a designated supervisor is required. (See p. 23.)
 - Chemicals** (i.e., hazardous, flammable, explosive or highly toxic; carcinogens; mutagens and all pesticides). I have reviewed with the student the Material Safety Data Sheet (MSDS) Listing for each chemical that will be used. I have also reviewed the proper safety standards for each chemical including toxicity data, proper handling techniques, and disposal methods. For *Safety in Academic Chemistry Laboratories*, visit the American Chemical Society's website at <http://pubs.acs.org>.
 - Equipment** (i.e., welders; lasers; voltage greater than 220 volts). I have reviewed with the student the proper operational procedures and safety precautions for the equipment to be used by the student. For information about laser standards and research, visit the OSHA website at www.osha.gov.
 - Firearms**. I have reviewed with the student the proper safety standards for firearms use.
 - Radioactive Substances**. I have reviewed the proper safety standards for each radioactive substance the student will use.
 - Radiation** (i.e., x-ray or nuclear; unshielded ionizing radiation of 100-400 nm wavelength). I have reviewed with the student the proper safety methods concerning the type of radiation the student will use.

Mark Clemente

Adult Sponsor's Printed Name

Signature

Date of Review

(Must be prior to experimentation.)

Research Plan (1A)

This completed form is required for ALL projects.

Type or print all information requested.

Answer all questions and complete Research Plan Attachment (see page 28)

1) Student's Name Katherine Kenyon Grade 12

2) Title of Project The Surface Warfare Simulator (SWS) computer program

3) Adult Sponsor Mark Clemente Phone: (757) 721-4110 ext. 77787 Email: MACLEMEN@vbschools.com

4) Is this a continuation from a previous year? Yes No

If Yes: a) Attach the previous year's abstract, Research Plan 1A and Research Plan Attachment and

b) Explain how this project is new and different from previous years on Continuation Form (7)

5) This year's laboratory experiment/data collection will begin: (must be stated (mm/dd/yy)

Projected Start Date: 09/01/2005

Projected End Date: Feb. 15, 2006

ACTUAL Start Date: 10/06/2005

ACTUAL End Date: _____

6) Where will you conduct your lab work? (check all that apply) Research Institution School Field Home

7) Name, address & phone of school and work site(s):

School:

Ocean Lakes High School

885 Schumann Drive

Virginia Beach, VA 23454

(757) 721-4110

Work site:

Home

2248 Natomia Drive

Virginia Beach, VA 23456

(757) 471-6115

Work site:

USS Oak Hill

Little Creek, VA

8) All projects require completed forms: Checklist for Adult Sponsor/Safety Assessment Form (1), Research Plan (1A), Research Plan Attachment and Approval Form (1B). If research was conducted in a site other than school (K-12), field, or home, a Regulated Research Institutional/Industrial Setting Form (1C) should be completed.

Check ALL items that apply to your research.

The following areas require review and approval by SRC or IRB prior to experimentation :

- Humans (requires prior IRB approval; complete Forms: Checklist, 1A, 1B, 4 [1C, 2, 3, if required])
- Vertebrate Animals (requires prior SRC or IACUC approval, complete: Checklist, 1A, 1B, 5A or 5B [1C, 2, 3, if required])
- Potentially Hazardous Biological Agents (requires prior SRC//IACUC/IBC/RAC approval; complete Forms: Checklist, 1A, 1B, 6A [1C, 2, 3, 6B as required])
- Controlled Substances (requires prior SRC approval; complete Forms: Checklist, 1A, 1B, 2 or 3 [1C, 2, 3 as required])

The following area requires approval by a Designated Supervisor prior to experimentation:

- Hazardous Substances or Devices (complete Forms: Checklist, 1A, 1B, 3 [1C, if required])

9) Complete Research Plan Attachment (See page 28) and attach to this form.

10) An abstract is required for all projects after experimentation (see page 25).

Research Plan Attachment

REQUIRED for ALL Projects

A complete research plan must accompany Research Plan Form (1A)

Additional pages may be attached

Student Name(s): Katherine Kenyon

Provide a typed research plan and attach to Research Plan Form (1A).

The research plan is to include the following:

- A. Question being addressed
- B. Hypothesis/Problem/Engineering Goals
- C. Description in detail of method or procedures (including chemical concentrations and drug dosages)

For human research, include survey or questionnaires if used, and critically evaluate the risk. See instructions for human research on p. 12 of the Rules. **For vertebrate animal research, you must briefly discuss POTENTIAL ALTERNATIVES and present a detailed justification for use of vertebrate animals.** See instructions on p. 15 of the International Rules.

- D. Bibliography

List at least five major references (e.g., science journal articles, books, internet sites) from your library research. If you plan to use vertebrate animals, give an additional animal care reference.

Research Plan: The Surface Warfare Simulator (SWS) computer program

- A. **Question Being Addressed:** Is a First-Person Shooter (FPS) simulation an adequate training tool for Surface Warfare?
- B. **Engineering Goals:** Develop a 3D Surface Warfare Simulator (SWS) based off of a primitive FPS engine. Work with a naval lieutenant to make improvements to the initial demo release of the Surface Warfare Simulator (SWS). To create an engaging program that will increase the productivity of communication coordination training and encourage the proper usage of military operations jargon for sailors involved in Surface Warfare scenarios.
- C. **Detailed Description of Procedure:** After the initial showing of the surface Warfare Simulator, I will meet with the lieutenant monthly as I integrate suggested improvements. So far I have meet with the lieutenant once, and the improvements he suggested were: integrate a voice or text messaging system to help facilitate communication within the simulated scenarios, move the gun mount locations, create a system to assign player locations, and limit the movement of players and guns.
- D. Bibliography:

Young, Vaughan. Programming a Multiplier FPS in DirectX. Hingham, MA: Charles River Media, 2005.

Young, Vaughan. Code Red Games. 11 Jun. 2005. <http://www.coderedgames.com>.

Donovan, Steve. C++ By Example. Indianapolis, IN: Que Corporation, 2002.

Jones, Wendy. Beginning DirectX 9. Boston, MA: Premier Press, 2004.

Microsoft Corporation. Direct X Documentation for C++. Microsoft DirectX 9 SDK: October 2004.



Tidewater Science Fair

2005-2006 Student Checklist

School Division Virginia Beach City Public Schools **Category:** Computer Science
Student Name Katherine Kenyon **PRINT** **Division:** Jr. Sr. X

ALL ITEMS ON THIS FORM MUST BE CHECKED AND THE FORM MUST BE SIGNED BY THE STUDENT, PARENT, AND TEACHER. THIS FORM MUST BE PAGE 1 OF YOUR APPLICATION PACKET.

ALL PROJECTS

BE CERTAIN THAT ALL BLANKS ON ALL FORMS ARE COMPLETED AND ALL SIGNATURES AND DATES ARE PRESENT. THE FORMS SHOULD THEN BE STAPLED IN ORDER BEHIND THIS CHECKLIST.

- Tidewater Science Fair Application
- Research Plan—Form 1A completed and signed, with Research Plan attached *
- Approval Form (1B) completed and signed*
- Checklist for Adult Sponsor/Safety Assessment Form (1)*
- Abstract (a summary of your work and findings)
- Media Release Form
- Project Notebook (to be brought to the Fair by student for display with project)
- Research Paper (Recommended-to be brought to the Fair by student for display with project)
- Project display meets Display and Safety Regulations

CERTAIN PROJECTS

ADDITIONAL FORMS ARE NEEDED FOR CERTAIN TYPES OF PROJECTS. THESE FORMS MUST BE SIGNED PRIOR TO THE START OF EXPERIMENTATION.

N/A If your project involves human subjects in any way, complete Human Subjects Forms (4), which must be signed by your school division's Institutional Review Board **BEFORE** experimentation begins. If the IRB determines risk to human subjects, you must include evidence of informed consent from each subject AND you must include a completed Qualified Scientist Form(2).*

N/A If your project involves non-human vertebrates, complete Qualified Scientist Form (2) or Designated Supervisor Form (3) and Vertebrate Animal Form (5A or 5B).*

N/A If your project involves microorganisms, controlled substances, hazardous substances/devices, recombinant DNA, fresh tissue, blood or body fluids, complete Qualified Scientist Form (2) or Designated Supervisor Form (3).*

N/A If your project involves microorganisms, rDNA, fresh tissue, blood or body fluids, complete Potentially Hazardous Biological Agents Form (6A).*

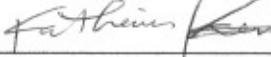
N/A If your project is conducted in an institutional or industrial setting (hospital, Thomas Jefferson Lab, NASA, a University, etc.), complete Form 1C.*

N/A If your project is a continuation in the same field of study from a previous year(s)' project, complete Form 7.*

These items constitute your Tidewater Science Fair Application Packet. Submit two stapled copies of your application packet. **RETAIN THE ORIGINAL APPLICATION PACKET and BRING IT WITH YOU TO THE FAIR.**

Katherine Kenyon

Student's Name Printed



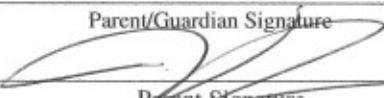
Student Signature

11/14/05

Date

Ocean Lakes High School

School



Parent/Guardian Signature

Date

11/14/05

Date

*These forms may be found in the ISEF Handbook or on the web site: <http://www.sciserv.org/isef/>



55TH ANNUAL TIDEWATER SCIENCE FAIR APPLICATION 2005-2006

(Please Print or Type)

NAME/TEAM SPOKESPERSON: Katherine Kenyon
(If TEAM, other Members on Back)

Gender: (circle) M or F

Home Address 2248 Natomia Drive Virginia Beach 23456
Number 2248 Street Natomia Drive City Virginia Beach Zip Code 23456

Email Address: katherinekenyon@gmail.com Phone Number: (757) 471 - 6115

School Name Ocean Lakes High School

School Address 885 Schumann Drive Virginia Beach 23454
Number 885 Street Schumann Drive City Virginia Beach Zip Code 23454

Title of Entry: The Surface Warfare Simulator (SWS) computer program

Division: _____ Junior (circle Gr. 6,7,8) X Senior (Circle Gr. 9,10,11 12)

Category* Computer science

Will you require an electrical outlet for your display? Yes X No _____

The student is responsible for providing his/her own 3-prong extension and all equipment needed for the display on the table.

AN APPLICATION NOT SIGNED BY AN ADULT-SPONSOR WILL NOT BE CONSIDERED.

I certify that the student(s) names on this application is/are a student(s) of the named school.

Mark Clemente
Name of Adult-Sponsor (Please Print)

Signature of Adult-Sponsor

These forms must be submitted no later than February 10, 2006, to a Tidewater Science Congress representative for your school system. **Send two (2) copies of the application, abstract, and all required forms. Keep the original of all forms to display with your project.**

Accepted applications will be notified between February 20-25, 2006. All acceptance decisions of the Tidewater Science Congress Advisory Committee will be final. **The Tidewater Science Congress does not make the decision to place the student in the proper category. The student and his/her sponsor make that selection.**

THERE IS NO APPEALS PROCESS. THE DECISION OF THE JUDGES IS FINAL.

- Select the category that best fits your research from the list below. See pages 4 & 9 (ISEF rules) for complete description of each category and all projects.

Behavioral and Social Sciences
Biochemistry
Botany
Chemistry
Computer Science

Earth Science
Engineering
Environmental Sciences
Mathematics
Medicine/Health

Microbiology
Physics
Space Science
Zoology
Team Projects